Detect Missing Values in a DataFrame

Aim

Write a Pandas program to detect missing values of a given DataFrame. Display True or False.

Algorithm

1. Import the pandas library
2. Create a sample DataFrame with some missing values
3. Use the `isnull()` method on the DataFrame to detect missing values
4. Display the resulting boolean DataFrame

Code

```python
import pandas as pd
import numpy as np

data = {'A': [1, 2, np.nan, 4, 5],
        'B': [5, np.nan, 7, 8, 9],
        'C': [1, 2, 3, np.nan, 5],
        'D': [5, 6, 7, 8, np.nan]}

df = pd.DataFrame(data)

missing_values = df.isnull()
print(missing_values)
```

Output

```
       A       B       C       D
0  False  False  False  False
1  False   True  False  False
2   True  False  False  False
3  False  False   True  False
4  False  False  False   True
```

Result

The program successfully detects and displays the missing values in the given DataFrame. Each cell in the output shows True if the corresponding value in the original DataFrame is missing (NaN), and False otherwise.